



Quinault Indian Nation

POST OFFICE BOX 189 ☐ TAHOLAH, WASHINGTON 98587 ☐ TELEPHONE (206) 276-8211

February 6, 1989

Cecil Carrol, Water Programs Coordinator
U.S. Environmental Protection Agency
Region X
Washington Operations Office
C/O Washington Dept. of Ecology, PV-11
Olympia, WA 98504

RECEIVED

FEB 07 '89

EPA-WOO

Dear Mr. Carrol:

The Quinault Indian Nation is hereby submitting the grant application for the 106 funds which is for the purpose of conducting a study that will identify the nature of the source of the pollution of Lake Quinault and coordinate efforts for the abatement of the pollution.

It is our understanding that the grant has already been approved at a funding level of \$9,051.39 with an additional \$2,262.85 in tribal resources for a total of \$11,314.24. When the appropriated funds are available the grant will be awarded.

If you have any questions or are in need of additional information, please contact Gloria Capoeman, Grants and Contracts Manager at 276-8211, extension 351.

Sincerely,

Joe DeLaCruz
Joe DeLaCruz
President
Quinault Indian Nation

JD:cb
enc.



Quinault Indian Nation

POST OFFICE BOX 189 ☐ TAHOLAH, WASHINGTON 98587 ☐ TELEPHONE (206) 276-6211

February 6, 1989

Cecil Carrol, Water Programs Coordinator
U.S. Environmental Protection Agency
Region X
Washington Operations Office
C/O Washington Dept. of Ecology, PV-11
Olympia, WA 98504

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Joe DeLaCruz
President
Quinault Indian Nation

JD:cb
enc.

FEDERAL ASSISTANCE

2. APPLICANT'S APPLICATION IDENTIFIER

a. NUMBER

b. DATE

Year month day

19

STATE APPLICATION IDENTIFIER

NOTE TO BE ASSIGNED BY STATE

a. NUMBER

b. DATE ASSIGNED

Year month day

19

1. TYPE OF SUBMISSION
(Mark appropriate box)

- ☐ NOTICE OF INTENT (OPTIONAL)
- ☐ PREAPPLICATION
- ☒ APPLICATION

Leave Blank

4. LEGAL APPLICANT/RECIPIENT

a. Applicant Name Quinault Indian Nation

b. Organization Unit Dept. of Community Development

c. Street/P.O. Box P.O. Box 189

d. City Taholah

e. County Grays Harbor

f. State Washington

g. ZIP Code 98587

h. Contact Person (Name & Telephone No.) Gloria Capoeman

5. EMPLOYER IDENTIFICATION NUMBER (EIN)

91-0760952

6. PROGRAM

(From CFDA)

a. NUMBER

MULTIPLE ☐

b. TITLE

7. TITLE OF APPLICANT'S PROJECT (Use section IV of this form to provide a summary description of the project.)

Lake Quinault Pollution Study

8. TYPE OF APPLICANT/RECIPIENT

- A—State
B—Intermediate
C—Substate
D—County
E—City
F—School District
G—Special Purpose District
H—Community Action Agency
I—Higher Educational Institution
J—Indian Tribe
K—Other (Specify):

Enter appropriate letter ☐ J

9. AREA OF PROJECT IMPACT (Names of cities, counties, states, etc.)

Quinault Indian Reservation

10. ESTIMATED NUMBER OF PERSONS BENEFITING

11. TYPE OF ASSISTANCE

- A—State Grant
B—Intermediate Grant
C—Substate Grant
D—County Grant
E—City Grant
F—School District Grant
G—Insurance
H—Other

Enter appropriate letter(s) ☐ A

12. PROPOSED FUNDING

a. FEDERAL \$ 9051 .00

b. APPLICANT 2263 .00

c. STATE .00

d. LOCAL .00

e. OTHER .00

f. Total \$ 11,314.00

13. CONGRESSIONAL DISTRICTS OF:

a. APPLICANT

2

15. PROJECT START DATE Year month day

19 89 01 31

b. PROJECT

2

16. PROJECT DURATION

12 Months

18. DATE DUE TO FEDERAL AGENCY

19 89 01 15

14. TYPE OF APPLICATION

- A—New
B—Renewal
C—Revision
D—Continuation
E—Augmentation

Enter appropriate letter ☐ A

17. TYPE OF CHANGE (For 14c or 14d)

- A—Increase Dollars
B—Decrease Dollars
C—Increase Dollars
D—Decrease Dollars
E—Continuation
F—Other (Specify):

Enter appropriate letter(s) ☐ ☐ ☐

19. FEDERAL AGENCY TO RECEIVE REQUEST

Environmental Protection Agency

a. ORGANIZATIONAL UNIT (IF APPROPRIATE)

Region X

b. ADMINISTRATIVE CONTACT (IF KNOWN)

Cecil Carroll

c. ADDRESS

Washington Operations Office

c/o WA Dept., of Ecology Pv-11

Olympia, WA 98504

20. EXISTING FEDERAL GRANT IDENTIFICATION NUMBER

21. REMARKS ADDED

☐ Yes ☒ No

22. THE APPLICANT CERTIFIES THAT:

To the best of my knowledge and belief, data in this preapplication/application are true and correct, the document has been duly authorized by the governing body of the applicant and the applicant will comply with the attached assurances if the assistance is approved.

a. YES, THIS NOTICE OF INTENT/PREAPPLICATION/APPLICATION WAS MADE AVAILABLE TO THE STATE EXECUTIVE ORDER 12372 PROCESS FOR REVIEW ON: DATE

b. NO, PROGRAM IS NOT COVERED BY E.O. 12372 ☒ OR PROGRAM HAS NOT BEEN SELECTED BY STATE FOR REVIEW ☐

23. CERTIFYING REPRESENTATIVE

a. TYPED NAME AND TITLE

Joseph B. DeLaCruz, President

b. SIGNATURE

Joseph B. DeLaCruz

24. APPLICATION RECEIVED 19

25. FEDERAL APPLICATION IDENTIFICATION NUMBER

26. FEDERAL GRANT IDENTIFICATION

27. ACTION TAKEN

- ☐ a. AWARDED
- ☐ b. REJECTED
- ☐ c. RETURNED FOR AMENDMENT
- ☐ d. RETURNED FOR E.O. 12372 SUBMISSION BY APPLICANT TO STATE
- ☐ e. DEFERRED
- ☐ f. WITHDRAWN

28. FUNDING

a. FEDERAL \$.00

b. APPLICANT .00

c. STATE .00

d. LOCAL .00

e. OTHER .00

f. TOTAL \$.00

29. ACTION DATE

19

31. CONTACT FOR ADDITIONAL INFORMATION (Name and telephone number)

30. STARTING DATE

19

32. ENDING DATE

19

33. REMARKS ADDED

☐ Yes ☐ No

PART II

Form Approved.
OMB No. 2030-0020
Approval expires 7-31-89

PROJECT APPROVAL INFORMATION

Item 1.

Does this assistance request State, local, regional, or other priority rating?

_____ Yes ☒ No

Name of Governing Body _____

Priority Rating _____

Item 2.

Does this assistance request require State or local advisory, educational, or health clearances?

_____ Yes ☒ No

Name of Agency or Board _____

(Attach Documentation)

Item 3.

Does this assistance request require clearinghouse review in accordance with Executive Order 12372?

_____ Yes ☒ No

(Attach Comments)

Item 4.

Does this assistance request require State, local, regional or other planning approval?

_____ Yes ☒ No

Name of Approving Agency _____

Date _____

Item 5.

Is the proposed project covered by an approved comprehensive plan?

_____ Yes ☒ No

Check one: State ☐

Local ☐

Regional ☐

Location of Plan _____

Item 6.

Will the assistance requested serve a Federal installation?

_____ Yes ☒ No

Name of Federal Installation _____

Federal Population benefiting from Project _____

Item 7.

Will the assistance requested be on Federal land or installation?

☒ Yes _____ No

Name of Federal Installation _____

Location of Federal Land Quinalt Indian Reservation

Percent of Project 100

Item 8.

Will the assistance requested have an impact or effect on the environment?

_____ Yes ☒ No

See instructions for additional information to be provided.

Item 9.

Has the project for which assistance is requested caused, since January 1, 1971, or will it cause, the displacement of any individual, family, business, or farm?

_____ Yes ☒ No

Number of:

Individuals _____

Families _____

Businesses _____

Farms _____

Item 10.

Is there other related assistance on this project previous, pending, or anticipated?

_____ Yes ☒ No

See instructions for additional information to be provided.

Item 11.

Is project in a Designated Flood Hazard Area?

_____ Yes ☒ No

PART III-BUDGET INFORMATION

SECTION A-BUDGET SUMMARY

GRANT PROGRAM, FUNCTION OR ACTIVITY (a)	FEDERAL CATALOG NO. (b)	ESTIMATED UNOBLIGATED FUNDS		NEW OR REVISED BUDGET		
		FEDERAL (c)	NON-FEDERAL (d)	FEDERAL (e)	NON-FEDERAL (f)	TOTAL (g)
1. Clean Water Act S.106		\$	\$	\$ 9051.39	\$ 2262.85	\$ 11,314.24
2.						
3.						
4.						
5. TOTALS		\$	\$	\$ 9051.39	\$ 2262.85	\$ 11,314.24

SECTION B-SCHEDULE A BUDGET CATEGORIES

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY				TOTAL (5)
	(1)	(2)	(3)	(4)	
a. Personnel	\$ 1,864.40	\$	\$	\$	\$ 1,864.40
b. Fringe Benefits	398.45				398.45
c. Travel	200.00				200.00
d. Equipment	0				0
e. Supplies	570.18				570.18
f. Contractual	3,600.00				3,600.00
g. Construction	0				0
h. Other	2,500.00				2,500.00
i. Total Direct Charges	9,133.03				9,133.03
j. Indirect Charges	2,181.21				2,181.21
k. TOTALS	\$ 11,314.24	\$	\$	\$	\$ 11,314.24
7. Program Income	\$ 0	\$	\$	\$	\$ 0

SECTION B - SCHEDULE B - BUDGET CATEGORIES

6. Program Elements	FUNDING			(4) MAN- YEARS
	(1) FEDERAL	(2) NON-FEDERAL	(3) TOTAL	
a. Research of Existing Data	\$ 800.00	\$ 734.06	\$ 1,534.06	.025
b. Monitoring & Testing of Water Quality	4,500.75	703.71	5,204.46	.025
c. Statistical Analyses of Data	650.00		650.00	
d. Conduct Sanitary Surveys	2,650.64	535.37	3,186.01	.025
e. Prepare Reports	450.00	289.71	739.71	.025
f.				
g.				
h.				
i. Total Program Elements	\$ 9,051.39	\$ 2,262.85	\$ 11,314.24	0.10
j. STATE TOTAL	\$	\$	\$	

SECTION C—NON-FEDERAL RESOURCES

(a) GRANT PROGRAM	(b) APPLICANT	(c) STATE	(d) OTHER SOURCES	(e) TOTALS
8. Clean Water Act Section 106	\$ 2,262.85	\$	\$	\$ 2,262.85
9.				
10.				
11.				
12. TOTALS	\$ 2,262.85	\$	\$	\$ 2,262.85

SECTION D—FORECASTED CASH NEEDS

	TOTAL FOR 1st YEAR	1st QUARTER	2nd QUARTER	3rd QUARTER	4th QUARTER
13. Federal	\$ 9,051.39	\$ 2,262.85	\$ 2,262.85	\$ 2,262.85	\$ 2,262.84
14. Non-Federal	2,262.85	565.72	565.71	565.71	565.71
15. TOTALS	\$ 11,314.24	\$ 2,828.57	\$ 2,828.56	\$ 2,828.56	\$ 2,828.55

SECTION E—BUDGET ESTIMATES OF FEDERAL FUNDS NEEDED FOR BALANCE OF THE PROJECT

(a) GRANT PROGRAM	FUTURE FUNDING PERIODS (YEARS)			
	(b) FIRST	(c) SECOND	(d) THIRD	(e) FOURTH
16.	\$	\$	\$	\$
17.				
18.				
19.				
20. TOTALS	\$	\$	\$	\$

SECTION F—OTHER BUDGET INFORMATION (Attach Additional Sheets If Necessary)

21. Direct Charges:

22. Indirect Charges: FY'89 approved indirect rate of 66.7% is computed on direct program expenditures excluding contracts and in-kind

23. Remarks:

PART V ASSURANCES

The Applicant agrees and certifies that he or she will comply with the regulations, policies, guidelines, and requirements, including OMB Circulars No. A-102 and A-87, and Executive Order 12372, as they relate to the application, acceptance, and use of Federal funds for this Federally assisted project. Also, the Applicant agrees and certifies with respect to the grant that:

1. It possesses legal authority to apply for the grant; that a resolution, motion or similar action has been duly adopted or passed as an official act of the applicant's governing body, authorizing the filing of the application, including all understandings and assurances contained therein, and directing and authorizing the person identified as the official representative of the applicant to act in connection with the application and to provide such additional information as may be required.
2. It will comply with Title VI of the Civil Rights Act of 1964 (P.L. 88-352) and in accordance with Title VI of that Act, no person in the United States shall, on the ground of race, color, or nation origin, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity for which the applicant receives Federal financial assistance and will immediately take any measures necessary to effectuate this agreement.
3. It will comply with Title VI of the Civil Rights Act of 1964 (42 USC 2000d) prohibiting employment discrimination where (1) the primary source of a grant is to provide employment or (2) discriminatory employment practices will result in unequal treatment of persons who are or should be benefiting from the grant-aided activity.
4. It will comply with requirements of the provisions of the Uniform Relocation Assistance and Real Property Acquisitions Act of 1970 (P.L. 91-646) which provides for fair and equitable treatment of persons displaced as a result of Federal and federally assisted programs.
5. It will comply with the provisions of the Hatch Act which limit the political activity of employees.
6. It will comply with the minimum wage and maximum hours provisions of the Federal Fair Labor Standards Act, as they apply to employees of institutions of higher education, hospitals, other non-profit organizations, and to employees of State and local governments who are not employed in integral operations in areas of traditional governmental functions.
7. It will establish safeguards to prohibit employees from using their positions for a purpose that is or gives the appearance of being motivated by a desire for private gain for themselves or others, particularly those with whom they have family, business, or other ties.
8. It will give the grantor agency and the Comptroller General through any authorized representative the access to and the right to examine all records, books, papers, or documents related to the grant.
9. It will comply with all requirements imposed by the Federal grantor agency concerning special requirements of law, program requirements, and other administrative requirements.
10. It will insure that the facilities under its ownership, lease or supervision which shall be utilized in the accomplishment of the project are not listed on the Environmental Protection Agency's (EPA) list of Violating Facilities and that it will notify the Federal grantor agency of the receipt of any communication from the Director of the EPA Office of Federal Activities indicating that a facility to be used in the project is under consideration for listing by the EPA.
11. It will comply with the flood insurance purchase requirements of Section 102(a) of the Flood Disaster Protection Act of 1973, Public Law 93-234, 87 Stat. 975, approved December 31, 1976. Section 102(a) requires, on and after March 2, 1975, the purchase of flood insurance in communities where such insurance is available as a condition for the receipt of any Federal financial assistance for construction or acquisition purposes for use in any area that has been identified by the Secretary of the Department of Housing and Urban Development as an area having special flood hazards.
12. It will comply with all applicable requirements of Section 13 of the Clean Water Act Amendments of 1972 (P.L. 92-500), if the grant is awarded under any grant authority of that Act, which provides that no person in the United States shall, on the ground of sex be excluded from participation in, be denied the benefits of, or be otherwise subject to discrimination under any program or activity under the said Clean Water Act Amendments for which the applicant receives financial assistance and will take all necessary measures to effectuate this agreement.



PROCUREMENT SYSTEM CERTIFICATION

Form Approved
OMB No 2000-0453
Approval expires 10-31-87

APPLICANT'S NAME

Quinault Indian Nation

ASSISTANCE APPLICATION NUMBER**APPLICANT'S ADDRESS**

P.O. Box 189
Taholah, WA 98587

SECTION I - INSTRUCTIONS

The applicant must complete and submit a copy of this form with each application for EPA Assistance. If the applicant has certified its procurement system to EPA within the past 2 years and the system has not been substantially revised, complete Part A in Section II, then sign and date the form. If the system has not been certified within the past 2 years, complete Part B, then sign and date the form.

SECTION II - CERTIFICATION

A. I affirm that the applicant has within the past 2 years certified to EPA that its procurement system complies with 40 CFR Part 33 and that the system meets the requirements in 40 CFR Part 33. The date of the applicant's latest certification is:

MONTH/YEAR

B. Based upon my evaluation of the applicant's procurement system, I, as authorized representative of the applicant: *(Check one of the following:)*

- ☐ 1. **CERTIFY** that the applicant's procurement system will meet all of the requirements of 40 CFR Part 33 before undertaking any procurement action with EPA assistance

Please furnish citations to applicable procurement ordinances and regulations

- ☒ 2. **DO NOT CERTIFY THE APPLICANT'S PROCUREMENT SYSTEM.** The applicant agrees to follow the requirements of 40 CFR Part 33, including the procedures in Appendix A, and allow EPA preaward review of proposed procurement actions that will use EPA assistance.

TYPED NAME AND TITLE

Joe DeLaCruz, President

SIGNATURE

Joe De La Cruz

DATE

2/6/89

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
ASSURANCE OF COMPLIANCE
FOR
TITLE VI OF THE CIVIL RIGHTS ACT OF 1964
AND
SECTION 13 OF THE FWPCA AMENDMENTS OF 1972

NAME AND ADDRESS OF APPLICANT/RECIPIENT (<i>Hereinafter called ASSUROR</i>) Quinault Indian Nation P.O. Box 189 Taholah, WA 98587	GRANT IDENTIFICATION NUMBER (<i>To be completed by EPA</i>)	GRANT AMOUNT REQUESTED \$ 9,051.39
	TYPE OF GRANT <input type="checkbox"/> DEMONSTRATION <input checked="" type="checkbox"/> RESEARCH <input type="checkbox"/> TRAINING <input type="checkbox"/> OTHER (<i>Specify</i>):	
	CHECK ONE: <input checked="" type="checkbox"/> NEW <input type="checkbox"/> CONTINUATION	

HEREBY AGREES THAT IT will comply with Title VI of the Civil Rights Act of 1964 (P.L. 88-352) and all requirements of the U.S. Environmental Protection Agency (*hereinafter called "EPA"*) issued pursuant to that title, to the end that in accordance with Title VI of that Act, no person in the United States shall, on the ground of race, color, or national origin be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity for which the Assuror receives financial assistance from EPA and hereby gives assurance that it will now and hereafter take all necessary measures to effectuate this agreement.

HEREBY AGREES THAT IT will comply with all applicable requirements of Section 13 of the Federal Water Pollution Control Act Amendments of 1972 (P.L. 92-500) and all requirements of EPA issued pursuant to that section, to the end that in accordance with that section of that Act, no person in the United States shall, on the ground of sex be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity under the said Federal Water Pollution Control Act Amendments for which the Assuror receives financial assistance from EPA and hereby gives assurance that it will now and hereafter take all necessary measures to effectuate this agreement.

If any real property or structure thereon is provided or improved with the aid of financial assistance extended to the Assuror by EPA, this Assurance obligates the Assuror, or, in the case of any transfer of such property, any transferee for the period during which the real property or structure is used for a purpose involving the provisions of similar services or benefits. If any personal property is so provided, this Assurance obligates the Assuror for the period during which it retains ownership or possession of the property. In all other cases, this Assurance obligates the Assuror for the period during which the financial assistance is extended to it by EPA.

THE ASSURANCE is given in consideration of and for the purpose of obtaining any and all Federal grants, loans, contracts, property discounts or other financial assistance extended after the date hereof to the Assuror by EPA including installment payments after such date on account of arrangements for Federal financial assistance which were approved before such date. The Assuror recognizes and agrees that such Federal financial assistance will be extended in reliance on the representations and agreements made in this Assurance and that the United States shall reserve the right to seek judicial enforcement of this Assurance. This Assurance is binding on the Assuror, its successors, transferees, and assignees, and the person or persons whose signature appear below are authorized to sign this Assurance on behalf of the Assuror.

The obligations assumed by the Assuror hereunder are in addition to any obligations which may be imposed on the Assuror by any applicable regulation now outstanding or which may hereafter be adopted by EPA to effectuate any provision or goal of the said Title VI and all applicable requirements of the said Section 13, and no part of this Assurance shall be read so as to in any way detract from or modify any obligation which may be imposed on the Assuror by any such regulation standing alone.

SIGNATURE OF ASSUROR BY PRESIDENT, CHAIRMAN OF BOARD OR COMPARABLE AUTHORIZED OFFICIAL <i>Joe De Sa Cruz</i>	DATE 2/6/89
---	--------------------

BACKGROUND GEOGRAPHICAL DATA

There are 196,245 acres on the Quinault Reservation, of which the land area is 189,621 acres. The type of ownership is as follows: 100% fee-patent, 57,645 acres; 100% trust, 98,224 acres; 100% Tribal, 7,585 acres; mixed fee, trust, and Tribal, 21,996 acres; and other government, 4,171 acres. Lake Quinault, 3,671 acres, is entirely within the Quinault Reservation. The lake area has a significant aesthetic appeal and the U.S. Forest Service has designated its lands as a scenic unit. The vegetation surrounding the lake is successional with mixtures of spruce, hemlock, douglas fir, as well as red alder.

Precipitation at Lake Quinault averages almost 12 feet per year. All lands have severe limitations for septic tank drainfields because of severe and frequent flooding and ponding of water due to poor drainage. Lake Quinault and its tributaries have potential problems with sediment load and bacterial contamination (Management and Planning Services, 1979). Campground use in the Lake Quinault area in the most recent year for which data are readily available, 1986, totaled 42,345 visitor-days in Park Service and Forest Service sites. The roads around Lake Quinault serve as the entryway to the Olympic National Park. Recreational Visits in the Olympic National Park have increased steadily throughout its existence (Management and Planning Services, 1979).

STATEMENT OF THE LAKE WATER QUALITY PROBLEM

Table 1 presents total coliform concentrations in the north fork of the Quinault River at the lake inlet and in the Quinault River where it discharges from the lake. These data indicate a significantly higher total coliform concentration in the discharge from the lake when compared with conditions upstream in the North Fork. In fact, downstream samples are in excess of Washington State Standards. Reasons for this are not entirely evident from the data. The increase in coliform concentrations may result from natural reproduction of total coliform organisms or may result from direct and indirect discharges of human sewage. Some unregulated direct discharges of domestic sewage are presently known to flow into the lake. Leakage into the lake from septic tank drainfields is also a distinct possibility. Additional data will be required to thoroughly document this situation. and prepare recommendations for its remediation. (Edde, Howard, Inc., 1977)

Edde, Howard, Inc. Baseline Conditions for Lake Water Quality and Fish Production. December 2, 1977. 1309 114th Avenue Southeast, Bellevue, WA 98004. (206) 455-9577. p 9.

Management and Planning Services Existing Conditions and Baseline Forecasts, Socio-economic and Environmental Studies of Lake Quinault Lands Under Contract CX-2000-0061 p.3. 716 Marion Street. Seattle, WA 98104.

Table 1.

Total coliform concentrations

	Mean /100ml	Maximum /100 ml	Minimum /100ml	# of samples
North Fork Quinault (inlet)	15	102	<2.2	75
Quinault River (discharge)	352	2000	20	18

Source: Howard Edde, Inc., Table 4.

Water quality standards for class AA waters in Washington specify that total coliform organisms shall not exceed values of 50/100 ml in fresh waters, with less than 10% of samples exceeding 230/100 ml when associated with any fecal source. As can be seen in Table 1, there appears to be a significant degradation in the bacteriological water quality within Lake Quinault. The purpose of this project is to put an end to the degradation of Lake Quinault.

APPROACH TO THE PROBLEM

In 1980 there were 592 housing units around Lake Quinault (Grays Harbor County, 1980). This density of use may be adversely impacting the lake water quality. Previous surveys and tests of the lake water quality have recommended that additional dye studies of shoreline septic systems be conducted. Such a study, at the Amanda Park community near the lake discharge area, by internal Quinault Indian Nation efforts have documented failed or non-existent septic systems which are discharging sewage effluent directly into the watercourse.

For approximately 75% of the shoreline of Lake Quinault, the Reservation boundary does not extend above the high water mark. The housing sites which may be contributing to the coliform load of the impoundment, however, seem to be discharging directly onto the Reservation, across the Reservation boundary, where houses are built very close to the shoreline. Because the housing units do not lie within the boundaries of the Reservation, the responsibility for the elimination of the sewage discharges will fall on multiple agencies,

Eddie, Howard, Inc. Baseline Conditions for Lake Water Quality and Fish Production. December 2, 1977. 1309 114th Avenue Southeast, Bellevue, WA 98004. (206) 455-9577. p 9.

Grays Harbor County Census, Lake Quinault Division, 1980.

depending on the exact ownership and lease arrangements that the U.S. Park Service and Forest Service have with the leaseholders.

The EPA has previously recommended that the site of one of the sewage discharges, the mobile home park at Amanda Park, be immediately closed, and that additional bacteriological monitoring of the surface water quality of the lake be conducted (Ragsdale, 1986). The proposed project will fulfill and expand upon those recommendations

The Quinault Indian Nation is aware that there may be additional sources of pollution entering the lake, and until recently the administrative and technical capability has not been available within the Tribal Government needed to effect an abatement of the pollution.

Now, with the assistance of an EPA Environmental Management Technical Assistance Grant, the Nation is committed to remediating the problem. The Quinault Indian Nation Regulations for On-Site Sewage Disposal Systems (Title 40) pertain to the type of discharges which appear to be occurring on a massive scale around Lake Quinault. Additional data obtained through this project will assist the Quinault Nation in a) strengthening the ordinance, b) enforcing it on the broad scale which seems to be necessary around Lake Quinault, c) thereby improving the bacteriological quality of Lake Quinault, and d) of the Quinault River emanating from the lake.

PROJECT OBJECTIVES

Technical assistance would be used to:

1. Identify contributors to the Lake Quinault degradation.
2. Monitor these zones to assess their relative contributions to the total coliform load suffered by Lake Quinault.
3. Target the primary contributing zones, identified by bacteriological monitoring, for sanitary surveys, possibly including dye studies of possible sewage discharge points.
4. Coordinate enforcement efforts with The National Park Service, the U.S. Forest Service, and the Grays Harbor County Health Department, as applicable, for the abatement of the effluent discharges.
5. Propose recommendations to the Tribal governing body for improvements to the Tribal sewage disposal ordinance.
6. Propose recommendations to the Governmental units responsible for the prevention and elimination of current sewage discharges under their direct or indirect jurisdiction.
7. Propose recommendations to the Tribal and Governmental units in the Lake Quinault area for the future protection of the

lake water quality through zoning and land-use practices.

RESEARCH PROTOCOL

Bacteriological monitoring: Water samples for bacteriological analysis will be collected at the shoreline of the lake, and approximately 100 feet offshore, according to established environmental science practices (Salvato, 1977). The entire shoreline will be sampled in a systematic manner, especially along areas where there is development. These paired samples will be analyzed using the membrane-filter and/or multiple-tube techniques and the results of these analyses will be mathematically tested for correlations between the pairs, and difference between zonal groups. A mean most probable number (mpn) or # of colonies, as appropriate, will be determined for the entire lake. Two-tailed t-tests will be used to classify the results into the categories of interest: polluted and non-polluted. Outliers from these baselines will be resampled. If the resampling correlates with the initial sample, sanitary surveys or dye studies will be conducted near the areas of the highest counts. Following this tertiary confirmation the environmental hazards in need of abatement will be identified by direct field inspections.

SIGNIFICANCE OF THE PROJECT

1. The project will attempt to determine the contributors to the elevated bacteriological counts observed in Lake Quinault. The protocols outlined above will provide the necessary and sufficient scientific and technical documentation of the nature and extent of the environmental and health problems threatening the Tribal Waters.
2. Abatement procedures will be designed based on the type of ownership of the point sources of pollution, and the most efficient way of eliminating these discharges. For example, if the majority of discharging systems are within the boundaries of the Quinault Reservation, the primary efforts will be directed toward enforcing the Tribal sewage disposal ordinances. If the largest number of failed systems is determined to be under the jurisdiction of the National Park Service, the Service will be asked to design their own abatement proceedings, if none currently exist, or will be used to document the need for additional enforcement efforts on their part.

Subsequent to this data derived through this project abatement procedures would be designed based on the type of ownership of the point sources of pollution, and the most efficient way of eliminating these discharges. For example, If the majority of discharging systems are within the boundaries of the Quinault Reservation the primary efforts would be directed toward enforcing the Tribal Sewage Disposal Ordinance. If the largest number of failed systems was determined to be under the jurisdiction of the National Park Service the Service could be asked to design their own abatement proceedings, if none currently exist, or could at least be used to document a need on their part for additional enforcement efforts.

LAKE QUINULT WATER QUALITY ASSESSMENT PROJECT--TASKS TIMELINE

89/90 CALENDAR MONTHS	3	4	5	6	7	8	9	10	11	12	1	2
Confer with EPA	X											
" with advisory panels	X											
Revise workplan	X											
Set up project admin.	X											
Develop lake zonal lists	X											
identify target areas												
Schedule sampling dates	X											
" assessment dates	X											
Compile baseline materls	X											
Prepare outcome assmt	X											
Dist. protocol for review	X											
Survey USPS & USFS: laws	X											
Review survey results		X										
Pretest water assessment prot	X											
Revise " " procedures		X										
Develop dye study procedures		X										
Pretest dye study procedures		X										
Revise dye study procedures		X										
Print assessment protocols		X										
Submit quarterly report		X				X			X			X
Develop sanitary survey criteria		X										
Prepare statistical measurements		X										
Convene advisory panel		X							X			
Conduct sampling and follow-ups					X	-----				X		
Edit and code assessment findings					X	-----					X	
Revise assessment procedures					X							
Confer with other water quality researchers						X						
Exchange assessment materials and procedures							X					
Prepare for outcome assessment/zonal review							X					
Develop preliminary assessment recommendations									X			
Review outcome assessment findings									X			
Verify missing assessment data										X		
Fill in missing data										X		
Enter coded assessment data base on computer											X	
Follow-up sanitary abatements in planning/development											X	
Edit and review abatement recommendations										X		
Verify monitoring findings/sampling protocol										X		
Prepare preliminary reliability reports											X	
Analyze sanitation/outcome relationships											X	
Draft report on sanitation/outcomes											X	
Deliver draft report											X	
Perform secondary field study evaluation analysis											X	
Draft final report and recommendations											X	
Deliver draft final report and recommendations											X	
Revise final report and recommendations												X
Deliver final report and recommendations												X
Complete final project audit												X
Disseminate report to governmental agencies, tribes, EPA												X
Provide follow-up consultations												X...
89/90 CALENDAR MONTHS	3	4	5	6	7	8	9	10	11	12	1	2

PROJECT MANAGEMENT

General Council
Quinault Business Committee-----!-----Tribal Health Committee
Executive Office Director
Director Office of Community Development
Project Manager
 !
Statistical Review Scientist---!----Research Assistant
Project Secretary

The proposed project will be directed by the Environmental Health Officer of the Quinault Indian Nation, under whose jurisdiction the responsibility for maintaining the quality of the lake lies. He will assume overall responsibility for the administration of the project, compliance with EPA regulations, performance of the required tasks in a timely manner, acquisition of water quality sampling records, analyses of the findings, and preparation and dissemination of project reports. All tasks related to ordinance review will be managed by the Project Director with the advice of the Tribal attorney, the Tribal Business Committee, and the EPA. All tasks related to outcomes assessment will be managed by the Project Director with the advice of the EPA, the Tribal Health Committee, and the President of the Quinault Indian Nation. For data management and statistical testing, the project director will be assisted by a professional research scientist. Secretarial assistance will be provided by the Quinault Nation.

PROJECT TEAM CAPABILITIES

Project Manager. The project will be directed by the Quinault Indian Nation Environmental Health Officer. He is a registered sanitarian in two states and chairs the Tribal Community Injury Control Committee. He is also a past Chairman of the Indian Health Service Field Health Committee. He has surveyed over 500 public water supplies for several government agencies, of which approximately 75% are surface water sources. He has been a Laboratory Director for a county public health laboratory, and has authored numerous laws and regulations related to environmental quality. He has collected and interpreted over 2,000 water samples. He is also Director of the Quinault Indian Nation Community Injury Control Demonstration Project related to motor vehicle injuries on the Quinault Reservation.

Statistical Review Scientist. The outcomes task will be the responsibility of a research professor whose training is in environmental psychology with emphasis on quantitative methods. He has directed a number of federal, state, and regional research contracts, including three needs assessments for regional government agencies. He supervised the analyses in a major EPA evaluation of pulmonary function in school-age children living in a high

air pollution area, and is currently studying intrastate funding formulas used by the California Department of Aging. He has published two professional articles, six major research reports, and presented over two dozen papers at professional conventions. His teaching area is elementary statistics.

TRIBAL RESEARCH FACILITIES

Research offices for the Project Manager and the research team will be provided by the Quinault Nation. Additional space to house the materials and records of this project will be allocated upon award of a grant. Laboratory space (when required for follow-up of missing outcomes or sampling data) is already available.

Mass testing of samples can be accomplished through the Grays Harbor County Health Department Laboratory. Water quality testing permits and procedures are already in place, which will facilitate the timely analysis of samples, as they are submitted. Cost savings will be achieved by including the samplings for this project in regular large scale samplings already conducted by the laboratory for the several dozen public water and sewage treatment facilities served by the laboratory.

California State University computer facilities available to the research scientist will be used for the storage, editing, coding, and analyses of the data collected for the research project. A Cyber 760 will be used for the major data analyses required. Statistical software needed for these analyses is already available, and all analyses required for the project will be performed under the supervision of the Project Director.

Clerical and secretarial support for the project will be provided by the Quinault Nation. Word processing and graphics equipment required for the project is already available in our offices. Regularly audited project accounting will be provided by the Director of Financial Operations.

PROGRAM BUDGET

BASELINE LAKE WATER QUALITY

1. Research current data delineating water quality and other related data

Contract Labor \$ 800.00

2. Bacteriological Monitoring and testing of existing lake water quality

Contract labor	750.00
Boat rental	350.00
Laboratory fees	1,800.00
Travel	100.00
Statistical analyses of monitoring data	650.00

3. Conduct sanitary surveys

Contract labor	950.00
Supplies	570.18
Boat Rental	350.00
Travel	100.00

4. Prepare reports for E.P.A., Forest Service, Park Services, Grays Harbor County & Quinault Indian Nation

450.00

DIRECT COSTS

6,870.18

INDIRECT COSTS @66.7%

2,181.21

GRAND TOTAL

\$9,051.39

TRIBAL RESOURCES

BASELINE LAKE WATER QUALITY

1. Research current data delineating water quality and other related data

Project Manager
40 hrs supervision @13.87 & fringe benefits \$ 673.36

Clerical Staff
10 hrs @5.00 & fringe benefits 60.70

2. Monitoring and Testing of existing lake water quality

Project Manager
40 hrs. supervision & fringe benefits 673.36

Clerical Staff
5 hrs @5.00 & fringe benefits 30.35

3. Conduct sanitary surveys

Project Manager
30 hrs @13.87 & fringe benefits 505.02

Clerical Staff
5 hrs @5.00 & fringe benefits 30.35

4. Prepare Reports

Project Manager
10 hrs supervision @13.87 & fringe benefits 168.34

Clerical Staff
20 hrs @5.00 & fringe benefits 121.37

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GRAND TOTAL

\$2,262.85